

Abstract of the Disclosure

A doped area is formed in the silicon substrate layer of a silicon-on-insulator stack including a silicon substrate, an insulator layer and an silicon
5 active layer, by implanting a species through at least the insulator layer. In one
embodiment, the silicon active layer is etched and the species are implanted in
the silicon substrate through the exposed insulator layer. Thus, a doped region
is formed in the silicon substrate under the areas where the silicon active layer
was removed. In another embodiment after etching the silicon active layer, a
10 dielectric layer is formed adjacent to the silicon active layer and on the insulator
layer. In this embodiment, the species are implanted over the entire wafer
through both the silicon active layer and the insulator layer. In both
embodiments, the species are implanted before forming a gate electrode of a
transistor.